

Magnificent Magnesium

Michael Cheikin MD

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Center for Optimal Health

Health, Wellness and Education in One Center

832 Germantown Pike, Suite 3

Plymouth Meeting, PA 19462

610-239-9901 drc@c4oh.org

Recently a patient accused me of being a Magnesium ("Mg") pusher! While this is not true, it does reflect my increasing emphasis on Mg as a nutrient in the diet. As I move forward in my career, I find more and more benefits of Mg.

Benefits of Mg

1. Bowel function. Low Mg can be a significant contributor to constipation. On the other hand, if the bowels are given more Mg than they can absorb (or the wrong form of Mg), then it can draw fluids into the bowel, causing diarrhea. Hence the mechanism of agents such as Milk of Magnesia (MOM) or Mg Citrate.

2. Muscle. Mg is intimately involved with muscle contraction and relaxation. It works closely with calcium. If Mg is low, muscles can have difficulty relaxing, or even spasm. This mechanism is in part a cause of PMS (spasms of the uterus), muscle stiffness, pain and cramps, high blood pressure (tightness of the muscles lining the arteries), migraines (spasm of muscles as a trigger as well as spasm of arteries to the brain) and other conditions.

Epsom salt is Mg sulfate. By taking a bath in these salts, the Mg passes through the skin to relax the muscles.

3. Heart. There have been medical articles in quality journals demonstrating a statistically significant relationship between the Mg levels in a community's drinking water, and the rate of heart attacks in that community. This is because many heart attacks, moreso in women than men, are due to spasm of the coronary arteries, rather than clogging by plaque. Certain medications, such as artificial progesterone in birth control pills and similar medications that have been used for menopausal symptoms, promote such spasm.

4. Energy. Mg is critical for energy production in every cell of the body. This is most apparent when it comes to muscles, which require a lot of energy when functioning. Low Mg can manifest as muscle weakness or fatigue. Since the heart is a big muscle, generalized fatigue or feeling out of breath can be due to low Mg. Sometimes muscle pain after exercise is another manifestation.

5. Bone. As with muscle, bone needs a balance of calcium and Mg to have optimal strength. While many women focus on calcium intake, Mg intake may be even more critical. Many supplements

formulated for women do not have sufficient Mg, or have it in a form that is not well absorbed.

6. Blocks Aluminum Absorption. One of the causes of Alzheimers dementia is aluminum acting as a toxin for brain cells. Mg competes with aluminum for transport into brain cells. However, for this effect to be optimal, Mg intake needs to be steady, or at least whenever the risk of aluminum absorption is present. Considering the quantity of aluminum in our lifestyle (cans, aluminum foil, cooking pans and utensils, antacids, deodorants, etc.) we might as well assume that aluminum is always present and needs to be defended against by taking Mg regularly.

7. Other functions. In fact, Mg is involved in hundreds of biochemical processes of our body. Its a basic ingredient, almost as ubiquitous as water.

Deficiency of Magnesium

It turns out that a significant percentage of our population has deficiency of Mg. As you read on, you will see that it affects so many bodily functions, that a low level can manifest as several problems.

Furthermore, measurement of Mg is not something that is done routinely--and if a doctor orders a standard blood (serum) Mg test, it will not accurately reflect a deficiency.

This is because most Mg resides within the cells. Therefore, Mg in the blood is outside of our cells. This idea of different "compartments" is similar to having different bank accounts. If someone's checking account balance is \$1,000, does this represent good financial health? Well, what if their credit card debt is -\$20,000! For the same reason, measuring serum Mg does not give us a true measure of the body's balance. I have had the opportunity (due to labs performing the wrong study and then repeating it correctly) to compare serum with "intracellular" or "Red Blood Cell" Mg. I have confirmed that even if the serum level is normal or high, the intracellular level can be low or abnormal.

"Within Normal Limits"

As stated above, measuring Mg requires some familiarity with the pitfalls of ordering tests. In addition, I have questioned the "normal range" of values. Often, these normal ranges are based on testing a number of people, and using these measurements to statistically predict a normal range.

If we know that a large percentage of our population is low in Mg, it is possible that what we consider normal range may be low. This is certainly true for other lab tests, (such as Vitamin D and Thyroid Stimulating Hormone), which have had their normal ranges adjusted recently. I prefer to keep myself and my patients on the high side of normal (see below).

Magnesium Nutrients and Supplements

While Mg is relatively easy to get in the diet, and relatively easy to absorb, the majority of the population is Mg deficient.

Absorption does require normal gastrointestinal (GI) function. The way I know this, is that many of my patients have low Mg values even after supplementation.

Dysbiosis and leaky gut syndrome, conditions where the gut is not working properly (see my related articles) will not allow the intestines to properly absorb Mg.

Food sources of Mg include nuts and whole grains; but most of us would benefit by taking additional Mg as a supplement.

Risks of Magnesium

For most of us, the risks of Mg supplementation are small for the body and the wallet. It is a relatively inexpensive supplement. If we take too much Mg, or increase intake too quickly, it will simply cause loose bowel movements.

Certain conditions, such as renal (kidney) insufficiency limits excretion of Mg, so doses have to be smaller and more closely monitored. On the other hand, I believe the risks of taking too little Mg are greater than those of taking too much. Therefore, the best way to add Mg is to go slowly, and work with an experienced practitioner.

Like me, once you experiment with how you feel on and off Mg, you will probably become a convert for life.

IMPORTANT NOTE: This general information should not be used to make decisions about medical care without the involvement of a knowledgeable practitioner.

For More Information

- O See Dr. Cheikin's related articles on GI (gastrointestinal) function, and others
- O Dr. Cheikin's website, www.cheikin.com, has

helpful articles on related topics

- O Dr. Cheikin offers workshops on topics such as Chronic Pain, Journaling, Nutrition, Weight Management, and classes in yoga, meditation and other methods of wellness. Please call to be placed on his contact list or if you wish to host a Workshop.
- O Lieberman, Shari: Real Vitamin & Mineral Book: Definitive Guide to Designing Your Personal Supplement Program, 3rd Ed. NY: Avery, 2003. ISBN 1583-331-522.
- O Pressman, A: The Complete Idiot's Guide to Vitamins and Minerals, 2nd Ed. Alpha, 2000. ISBN 0028-639-642.
- O Christiane Northrup M.D.: The Wisdom of Menopause: Creating Physical and Emotional Health and Healing During the Change. Bantam, 2001. 0553-801-21X
- O Campbell, T. Colin: The China Study: The Most Comprehensive Study Ever Conducted and the Startling Implications for Diet, Weight Loss and Long-term Health. Dallas: Benbella, 2004. ISBN 1932-100-385.
- O Pizzorno, Joseph: Total Wellness: Improve Your Health by Understanding and Cooperating with Your Body's Natural Healing Systems. Prima Publishing, 1997, ISBN 0761-510-94X.

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Michael Cheikin MD is a holistic physician, Board Certified in Physical Medicine and Rehabilitation ("Physiatry"), Pain Management, Spinal Cord Medicine and Electrodiagnostic Medicine. He has provided leadership to several local medical institutions. Dr. Cheikin utilizes conventional and "alternative" modalities, including special lab tests, nutrition, yoga and acupuncture to enhance the healing of obscure, chronic and severe problems. He accepts most insurances for consultation. 610-239-9901 or drc@c4oh.org.